Administration is considering approving a preservative-free morphine for intraspinal use (A. H. Robins Company, Inc), which may make this method of administration more practical. However, investigation of the drug, total amount to be applied and the route, as well as side effects and potential benefits, continues. The "silver bullet" of pain relief has not yet been found.

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Celiac Plexus Alcohol Block for Upper Abdominal Cancer Pain

THE MANAGEMENT of intractable pain in patients who have recurrent or nonresectable carcinoma of the upper abdomen is often a major problem for a responsible physician. In this group of patients, celiac plexus alcohol block appears to be the most effective and least hazardous means of palliative therapy.

The celiac plexus provides all of the autonomic innervation of the upper abdominal viscera. Anatomically, it is a retroperitoneal structure located anterior to the aorta at the level of the twelfth thoracic and first lumbar vertebrae. The celiac plexus is comprised of visceral afferent and efferent sympathetic fibers from the fifth thoracic to the second lumbar levels and preganglionic parasympathetic fibers from the vagus nerve.

A diagnostic celiac plexus block should precede therapeutic alcohol neurolysis for three reasons. First, one should ascertain how much pain relief (if any) can be achieved. Second, a diagnostic block allows an anesthesiologist to evaluate appropriate needle depth and position. Third, the physiologic consequences of the block can be appreciated and evaluated when a temporary block is produced. This is accomplished using 0.25% bupivacaine hydrochloride resulting in an 8- to 12-hour block.

The celiac block is done by a posterior approach as described by Kappis in 1919, with the patient awake and in the prone position. For alcohol neurolysis, needle placement should be verified by either x-ray films or computed tomography. The therapeutic block consists of injecting 25 ml of a 50% ethanol solution through each of two 20-gauge needles. Paralysis can result from this block due to faulty needle placement and consequent spread of alcohol into the subarachnoid space, epidural space or onto thoracic and lumbar somatic nerves.

Although it is difficult to define success when treating pain, up to 94% of patients will acknowledge partial to complete pain relief. Most often, the relief is noted within minutes after alcohol injection, though up to 24 hours are needed for maximal effect on occasion. The duration of pain relief postblock is unpredictable, and the block can be repeated as necessary. In many cases, however, patients succumb from the underlying disease before the dissipation of the effects of the neurolytic block. Due to the splanchnicectomy, 85% of patients report dizziness upon sitting for the first time postblock. This resolves in less than a week.

An interesting question is whether celiac plexus neurolysis might result in an acute problem in the abdomen going unnoticed. To date, this risk has not proved worthy of concern.

Continuous intraspinal narcotic administration is currently being offered at select centers as a "reversible modality" in place of neurolytic therapy for the control of terminal cancer pain. Some of the requirements necessary for its successful implementation include hospital admission (before and after reservoir implantation), the development of tolerance requiring adjustment of delivered narcotic concentration and close follow-up for percutaneous refilling of the reservoir. Respiratory depression has not been reported thus far. Neurotoxicity from chronic intraspinal catheters or narcotic infusions (or both) has not been encountered. The use of continuous intraspinal narcotics is in its early stages. Many resources are needed for its successful implementation. At present, continuous intraspinal narcotics for the control of upper abdominal cancer pain should be reserved for patients whose pain is refractory to celiac plexus neurolysis.

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Blood Glucose Homeostasis

THE INTRAVENOUS ADMINISTRATION of 10 ml per minute of a 5% glucose solution to a healthy anesthetized patient will result in mild hyperglycemia (200 mg per dl or lower). However, the same infusion rate in a patient with glucose intolerance, such as diabetic or obese persons, will result in a greater degree of hyperglycemia that is of pathophysiologic significance (250 mg per dl or higher). The adverse sequelae of hyperglycemia are distinct from those associated with a ketoacidotic state and have been traditionally overlooked and untreated. These include (1) osmotic diuresis effecting both a hypovolemia and a depletion of potassium, phosphate and sodium. The physiologic disturbances of hypokalemia and hyponatremia are well